

Mineral Industry Surveys

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NICKEL IN MAY 2005

Reported domestic nickel consumption in May, on a daily average basis, was 9% less than that of April, according to the U.S. Geological Survey. Daily average nickel consumption of cathodes, pellets, briquets, powders, and ferronickel for stainless steel was 59.4 metric tons per day (t/d), 2% less than the 60.5 t/d for April and 15% less than the 69.7 t/d (revised) for May 2004. Consumption of >99.8% nickel metal to make superalloys (such as INCONEL 718 and WASPALOY) decreased slightly from April levels, on a daily average basis. Consumption to make corrosion-resistant, less stress-resistant nickel-base alloys (such as INCONEL 600 and Nickel 200) also weakened, decreasing by 6% on a daily average basis. Sales to plating companies averaged 22.0 t/d, about 34% less than the revised April sales figure of 33.4 t/d.

On May 31, U.S. consumer stocks of cathode, pellets, briquets, and powders totaled 1,580 metric tons (t), up 4% from the figure of 1,520 t for April 30 and 11% greater than the 1,420 t reported for December 31, 2004. Stocks in London Metal Exchange (LME) warehouses totaled 8,064 t on May 31, 34% greater than the 6,024 t on April 30.

The United States imported 51,200 t of primary nickel in the first 4 months of 2005, 12% greater than the 45,700 t for the corresponding period of 2004. Trade data for May will appear in a subsequent report.

On April 19, 2005, Barrick Gold Corporation (Toronto, Ontario, Canada) and Falconbridge Limited (Toronto, Ontario, Canada) announced that they formed a joint venture to further evaluate the Kabanga nickel deposits in northwestern Tanzania. Barrick acquired the Kabanga concessions in 1999 as part of its takeover of Sutton Resources Limited. Falconbridge has acquired a 50% indirect interest in the project for US\$15 million

and will operate the joint venture. Falconbridge will fund and conduct a US\$50 million program that will include additional exploration and infill drilling (Barrick Gold Corporation, 2005).

Barrick has significantly increased the value of Kabanga since 1999 by identifying additional resources. Three deposits have been identified to date—Main, North, and MNB. The current inferred resources for Main and North total 26.4 million metric tons grading 2.6% nickel (Falconbridge Limited, 2004). The principal ore mineral is pentlandite, (Fe,Ni)₉S₈.

Falconbridge is prepared to fund an additional US\$95 million of project development to advance the Kabanga project. Project engineers have proposed an underground mining operation with an onsite surface concentrator. If the final feasibility study is successful, the proposed operation would mine 2 million metric tons per year of ore and produce 30,000 to 35,000 metric tons per year of nickel in sulfide concentrates. Falconbridge would be responsible for marketing the concentrates on behalf of the joint venture. Under the current conceptual plan, at least half of the concentrates would be shipped to Falconbridge's smelter at Sudbury, Ontario, for processing into matte.

Tan Range Exploration Corporation (Sharon, CT) also is actively exploring for nickel sulfides in the Kabanga region.

References Cited

- Barrick Gold Corporation, 2005, Barrick and Falconbridge finalize joint venture on Kabanga project: Toronto, Ontario, Canada, Barrick Gold Corporation press release, April 19, 3 p.
Falconbridge Limited, 2004, Update on nickel exploration results and project development activities: Toronto, Ontario, Canada, Falconbridge Limited conference call, March 11, slide presentation.

TABLE 1
CONSUMPTION OF NICKEL (EXCLUSIVE OF SCRAP), BY FORM AND USE¹

(Metric tons, nickel content)

Period	Cathodes, pellets, briquets, and powder	Ferronickel	Oxide-sinter, salts, and other forms	Total	Total year to date
2004:					
May	5,310	528	28	5,870	27,100
June	5,260	556	39	5,850	33,000
July	4,820	536	43	5,400	38,300
August	4,880	677	36	5,590	43,900
September	4,570	549	48	5,170	49,100
October	5,110	734	41	5,890	55,000
November	4,640	504	37	5,180	60,200
December	4,550	482	36	5,070	65,200
January-December	58,200	6,600	461	65,200	XX
2005:					
January	5,020	589	40	5,650	5,650
February	4,870	534	38	5,440	11,100
March	4,870	533	38	5,440	16,500
April	5,280 ^r	500	45	5,830 ^r	22,400 ^r
May:					
Steel:					
Stainless and heat resisting	1,290	551	W	1,840	9,520
Alloy (excludes stainless)	W	--	--	W	1,300
Superalloys	998	--	W	998	5,110
Copper-nickel alloys	W	--	--	W	W
Electric, magnetic, and expansion alloys	12	--	--	12	63
Other nickel & nickel alloys	W	--	W	W	W
Cast iron	W	--	--	W	W
Electroplating (sales to platers)	683	--	--	683	4,010
Chemical and chemical uses	W	--	--	W	W
Other uses	1,920	--	36	1,950	7,840
Total reported	4,900 ²	551	36	5,490	27,800
Total all companies (calc) ³	XX	XX	XX	10,300	52,400
2005: January-May	24,900	2,710	199	27,800	XX
2004: January-May	24,400	2,570	178	27,100	XX

^rRevised. W Withheld to avoid disclosing company proprietary data; included in "Other uses" category. XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Of consumption, 3,930 metric tons were consumed as cathodes and pellets, the remainder as briquets and powder.

³Figures represent calculated apparent consumption; based on the revised proportion of reported primary consumption (53.17%) to apparent primary consumption for 2003.

TABLE 2
ENDING STOCKS OF NICKEL (EXCLUSIVE OF SCRAP) HELD BY CONSUMERS,
BY FORM AND USE^{1,2}

(Metric tons, nickel content)

Period	Cathodes, pellets, briquets, and powder	Ferronickel	Oxide-sinter, salts, and other forms	Total
2004:				
May	1,380	158	42	1,580
June	1,470	185	45	1,700
July	1,260	147	30	1,440
August	1,490	139	32	1,660
September	1,640	184	31	1,860
October	1,390	146	50	1,590
November	1,340	170	59	1,570
December	1,420	147	45	1,610
2005:				
January	1,460	192	52	1,700
February	1,510	227	70	1,800
March	1,850	221	45	2,110
April	1,520	184	49	1,750
May:				
Steel (stainless, heat resisting and alloy)	527	178	(3)	705
Nonferrous alloys ⁴	1,020	20	(3)	1,040
Foundry (cast irons)	(3)	W	--	(3)
Chemical (catalysts, ceramics, plating salt, etc.) and unspecified uses	30	W	55	85
Total	1,580	198	55	1,830

W Withheld to avoid disclosing company proprietary data. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Stocks held by companies that consume nickel in more than one end use category are credited to the major category.

Stocks are subject to revisions owing to inventory adjustments.

³Included in the "Chemical and unspecified uses" category.

⁴Includes superalloys, nickel-copper and copper-nickel alloys, permanent magnet alloys, and other nickel alloys.

TABLE 3
CONSUMPTION AND ENDING STOCKS OF PURCHASED SECONDARY NICKEL, BY USE¹

(Metric tons, nickel content)

Period	Consumption			Stocks		
	Ferrous scrap ²	Nonferrous scrap ³	Total scrap	Ferrous scrap ²	Nonferrous scrap ³	Total scrap
2004:						
May	6,460	805	7,260	3,670	63	3,730
June	6,330	808	7,140	3,690	85	3,770
July	6,100	676	6,770	3,580	76	3,650
August	6,260	960	7,220	3,350	73	3,420
September	5,640	816	6,450	3,740	75	3,810
October	6,100	713	6,820	3,770	70	3,840
November	5,950	740	6,690	3,550	63	3,620
December	6,430	585	7,010	3,320	65	3,390
January-December	75,100	9,330	84,400	XX	XX	XX
2005:						
January	5,720 ^r	680 ^r	6,400 ^r	2,330	80	2,410
February	4,680	774 ^r	5,460	2,440	90	2,530
March	4,510	832 ^r	5,340	2,490	106	2,600
April	4,930 ^r	796 ^r	5,730 ^r	2,510 ^r	106	2,620 ^r
May	3,790	808	4,590	2,620	106	2,730
January-May	23,600	3,890	27,500	XX	XX	XX

^rRevised. XX Not applicable.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Nickel content is calculated from an average nickel content and the reported gross weight of scrap.

³Combined consumption and stocks of aluminum-base, copper-base, and nickel-base scrap.

TABLE 4
U.S. IMPORTS FOR CONSUMPTION OF NICKEL, BY COUNTRY¹

(Metric tons, nickel content)²

Period and country of origin	Cathodes pellets, and briquets	Powder and flakes	Ferro- nickel	Metal- lurgical- grade oxide	Waste and scrap	Stainless steel scrap	Chemicals	Total ³	Total year to date ⁴	Wrought nickel
2004:										
April	10,700	720	1,680	23	574	908	296	14,900	53,400	53
May	8,530	564	941	--	698	680	381	11,800	65,200	55
June	9,190	732	978	--	553	680	324	12,500	77,600	86
July	7,370	914	1,070	--	624	663	374	11,000	88,600	79
August	9,770	800	1,020	24	585	928	434	13,600	102,000	116
September	6,590	571	1,080	207	689	697	339	10,200	112,000	88
October	11,100	976	1,280	210	535	780	321	15,300	128,000	43
November	9,140	659	1,240	240	602	696	378	13,000	141,000	33
December	9,380 ⁵	814	1,750	170	403	1,340	295	14,100	155,000	46
January-December	107,000	9,220	14,000	1,210	7,850	11,000	4,440	155,000	XX	796
2005:										
January	9,040	756	1,940	114	585	780	279	13,500	13,500	40
February	10,200	596	2,040	122	524	853	360	14,700	28,200	95
March	7,600	1,010	1,950	488	629	750	334	12,800	40,900	81
April:										
Australia	1,720	40	--	--	--	--	--	1,760	4,280	--
Brazil	21	--	--	--	--	--	--	21	29	--
Canada	4,930	423	--	319	161	719	--	6,550	25,000	(5)
Colombia	--	--	505	--	--	--	--	505	1,330	--
Dominican Republic	--	--	1,220	--	--	(5)	--	1,220	5,850	--
Finland	132	17	--	--	--	--	158	307	1,420	--
France	62	--	--	--	80	--	10	152	730	14
Germany	(5)	1	--	--	9	--	30	40	355	28
Japan	--	2	--	(5)	1	--	27	30	140	2
Mexico	--	--	--	--	20	332	2	354	846	--
New Caledonia	--	--	100	--	--	--	--	100	400	--
Norway	1,590	--	--	--	7	--	--	1,600	5,430	2
Russia	2,470	200	--	--	--	--	--	2,670	8,040	--
South Africa	--	61	--	--	--	--	--	61	220	--
Sweden	--	(5)	--	--	--	--	--	(5)	7	--
United Kingdom	17	58	1	4	137	--	15	232	967	(5)
Venezuela	--	--	--	--	19	--	--	19	59	--
Zimbabwe	160	--	--	--	--	--	--	160	696	--
Other	27	11	--	2	81	16	74	211	1,080	19
Total	11,100	813	1,820	325	515	1,070	316	16,000	56,900	65
2005: January-April	38,000	3,170	7,760	1,050	2,250	3,450	1,290	56,900	XX	281
2004: January-April	36,000	3,190	4,590	357	3,160	4,520	1,590	53,400	XX	251

¹Revised. XX Not applicable. -- Zero.

²Data are rounded to no more than three significant digits; may not add to totals shown.

³The nickel contents are assumed to be as follows: metallurgical-grade oxide (77%), waste and scrap (50%), and stainless steel scrap (7.5%). The chemicals category includes chlorides (25%); sulfates (22%); other salts (22%); supported catalysts (22%); and oxide, sesquioxide, and hydroxide (65%).

⁴Excludes wrought nickel.

⁵May include revisions for prior months.

⁶Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF NICKEL, BY COUNTRY¹

(Metric tons, nickel content)²

Period and country of destination	Cathodes pellets, and briquets	Powder and flakes	Ferro- nickel	Metal- lurgical- grade oxide	Waste and scrap	Stainless steel scrap	Chemicals	Total ³	Total year to date	Wrought nickel
2004:										
April	144	132	3	8	1,070	2,660	563	4,570	17,500	227
May	54	127	23	4	1,290	3,100	323	4,920	22,400	120
June	187	138	3	4	1,310	4,720	567	6,930	29,400	65
July	18	171	(4)	2	1,160	2,600	473	4,420	33,800	100
August	39	172	--	1	1,190	2,330	200	3,940	37,700	68
September	112	238	--	7	1,170	2,610	498	4,640	42,400	86
October	60	257	1	2	1,110	3,620	197	5,240	47,600	44
November	77	257	1	45	890	2,530	285	4,080	51,700	42
December	27	196	23	98	1,030	2,980	227	4,580	56,300	95
January-December	972	2,130	68	201	12,400	35,900	4,630	56,300	XX	1,110
2005:										
January	37	211	1	161	1,230	2,400	228	4,270	4,270	63
February	31	165	3	3	877	3,960	316	5,360	9,620	57
March	91	160	12	7	1,070	3,990	289	5,630	15,200	131
April:										
Australia	--	1	--	--	49	--	(4)	50	198	1
Belgium	--	9	--	--	--	23	4	36	116	--
Canada	9	10	2	--	672	258	90	1,040	4,480	5
China	--	1	4	--	19	1,950	14	1,990	5,590	58
Finland	--	--	--	--	--	991	21	1,010	1,990	--
Germany	--	23	--	--	32	9	10	74	275	1
India	--	--	--	--	--	481	--	481	1,200	2
Italy	--	14	--	--	--	3	--	17	20	2
Japan	2	6	--	1	4	76	27	116	367	7
Korea, Republic of	--	6	--	--	--	655	100	761	2,070	10
Mexico	50	41	--	(4)	(4)	496	7	594	2,410	(4)
Netherlands	--	(4)	--	--	38	11	--	49	177	(4)
South Africa	--	--	--	--	1	--	1	2	43	--
Spain	--	14	--	--	--	--	--	14	18	--
Sweden	--	--	--	--	30	--	--	30	125	--
Taiwan	--	5	--	--	--	569	5	579	1,920	1
United Kingdom	--	21	--	2	54	5	9	91	484	2
Other	21	39	--	1	3	174	56	294	996	15
Total	82	190	6	4	902	5,710	344	7,230	22,500	104
2005: January-April	242	727	21	174	4,090	16,100	1,180	22,500	XX	355
2004: January-April	398	577	18	37	3,260	11,400	1,860	17,500	XX	493

XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²The nickel contents are assumed to be as follows: metallurgical-grade oxide (77%), waste and scrap (50%), and stainless steel scrap (7.5%). The chemicals category includes chlorides (25%); sulfates (22%); other salts (22%); supported catalysts (22%); and oxide, sesquioxide, and hydroxide (65%).

³Excludes wrought nickel.

⁴Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF NICKEL ALLOYS, BY COUNTRY¹

(Metric tons, gross weight)

Period and country of origin	Unwrought alloyed ingot	Bars, rods and profiles	Wire	Plates and sheets	Foil	Tubes and pipes	Other alloyed articles	Total	Total year to date
2004:									
April	345	255	504	164	44	773	172	2,260	6,770
May	123	269	494	131	14	231	115	1,380	8,150
June	227	344	517	301	40	136	100	1,670	9,820
July	271	322	504	192	32	140	87	1,550	11,400
August	324	251	496	236	31	89	109	1,540	12,900
September	528	193	440	192	30	317	79	1,780	14,700
October	295	285	477	215	7	148	206	1,630	16,300
November	245	247	624	280	41	246	233	1,920	18,200
December	269	300	588	226	43	106	145	1,680	19,900
January-December	3,000	3,120	5,740	2,590	322	3,060	2,080	19,900	XX
2005:									
January	273	220	600	234	35	125	304	1,730	1,730
February	329	255	422	259	49	230	202	1,690	3,420
March:	361	294	629	316	16	325	173	1,890	5,320
April:									
Australia	73	--	1	--	--	--	(2)	74	339
Belgium	--	--	(2)	2	--	--	--	2	31
Canada	--	2	1	--	--	11	33	47	151
China	--	(2)	--	--	--	--	54	54	294
France	--	6	160	21	--	40	4	231	683
Germany	89	128	150	239	32	81	1	720	3,130
Italy	--	145	4	--	--	1	22	172	539
Japan	--	--	8	3	1	(2)	1	13	66
Mexico	--	--	--	--	--	--	11	11	52
Netherlands	--	--	--	--	--	--	19	19	74
South Africa	20	--	--	--	--	--	--	20	136
Sweden	--	25	151	8	--	6	1	191	887
United Kingdom	21	23	5	1	(2)	3	10	63	307
Other	38	9	6	--	--	(2)	20	73	316
Total	241	338	486	274	33	142	176	1,690	7,010
2005: January-April	1,200	1,110	2,140	1,080	133	489	855	7,010	XX
2004: January-April	713	913	1,600	821	84	1,640	1,000	6,770	XX

XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 7
U.S. EXPORTS OF NICKEL ALLOYS, BY COUNTRY¹

(Metric tons, gross weight)

Period and country of destination	Unwrought alloyed ingot	Bars, rods and profiles	Wire	Plates and sheets	Foil	Tubes and pipes	Other alloyed articles	Total	Total year to date
2004:									
April	283	649	99	472	22	144	303	1,970	9,160
May	457	976	168	334	46	119	543	2,640	11,800
June	511	722	130	427	33	170	272	2,270	14,100
July	614	1,100	177	350	11	132	244	2,630	16,700
August	629	760	176	234	10	123	221	2,150	18,800
September	1,010	1,080	169	389	16	163	257	3,090	21,900
October	517	776	190	390	26	178	236	2,310	24,300
November	613	1,110	183	327	21	148	256	2,660	26,900
December	823	1,100	157	350	5	150	244	2,830	29,700
January-December	7,510	10,400	1,850	4,470	244	1,800	3,440	29,700	XX
2005:									
January	994	1,180	84	312	11	226	186	2,990	2,990
February	910	1,050	104	392	10	163	278	2,910	5,900
March	1,200	1,350	178	388	7	200	404	3,730	9,630
April:									
Australia	2	1	(2)	(2)	--	--	1	4	35
Belgium	61	285	9	4	--	3	5	367	1,470
Canada	15	56	16	54	3	34	24	202	718
China	--	59	(2)	84	--	2	68	213	805
France	75	374	1	2	(2)	2	4	458	1,520
Germany	5	69	8	13	(2)	4	5	104	469
India	2	30	1	1	--	4	1	39	149
Ireland	(2)	--	24	--	--	--	(2)	24	32
Israel	2	82	5	7	(2)	(2)	--	96	360
Italy	84	2	2	9	--	(2)	(2)	97	614
Japan	199	54	1	12	(2)	17	(2)	283	2,420
Korea, Republic of	--	7	1	56	--	6	(2)	70	245
Mexico	(2)	32	41	20	2	50	124	269	1,140
Netherlands	--	3	--	2	--	2	1	8	97
Singapore	(2)	1	(2)	1	--	2	(2)	4	143
Spain	(2)	--	4	(2)	--	--	(2)	4	70
Sweden	1	(2)	--	6	--	--	3	10	62
Switzerland	21	1	--	2	--	(2)	(2)	24	131
Taiwan	2	6	(2)	12	(2)	9	1	30	112
United Kingdom	6	222	4	15	1	6	6	260	1,080
Other	24	63	18	40	2	49	38	234	761
Total	499	1,350	135	340	8	190	281	2,800	12,400
2005: January-April	3,610	4,930	502	1,430	36	778	1,150	12,400	XX
2004: January-April	2,330	2,800	500	1,670	76	618	1,170	9,160	XX

XX Not applicable. -- Zero.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 8
NICKEL CONSUMPTION IN CAST AND WROUGHT PRODUCTS

	Percent	
	Wrought	Cast
May 2005:		
Stainless and heat resisting steels	96	4
Alloy steels	99	1
Superalloys	88	12
Copper-nickel alloys	96	4
Other nickel-base alloys	100	(1)

¹Less than 1/2 unit.

TABLE 9
NICKEL PRICES

Date	Platts Metals Week			American Metal Market	
	Cathode NY Dealer \$/lb.	LME Cash mean ¹ \$/t	LME Cash mean ¹ \$/lb.	18/8 Stainless steel scrap Free market \$/long ton (gw)	18/8 Stainless steel scrap Pittsburgh \$/long ton (gw)
2004:					
Average for month of:					
May	5.185	11,118.289	5.043	1,281	1,367
June	6.063	13,533.523	6.139	1,241	1,208
July	6.990	15,023.295	6.814	1,430	1,402
August	6.320	13,679.524	6.205	1,481	1,560
September	6.112	13,270.909	6.020	1,405	1,470
October	6.523	14,404.286	6.534	1,413	1,470
November	6.488	14,045.455	6.371	1,506	1,562
December	6.286	13,768.810	6.245	1,457	1,523
Yearly average	6.341	13,823.241	6.270	1,427	1,473
2005:					
Average for week ending:					
May 6	7.70-7.96	16,383.125	7.431	1,640-1,655	1,670-1,700
May 13	8.12-8.55	17,403.000	7.894	1,640-1,655	1,600-1,620
May 20	7.83-8.49	16,847.500	7.642	1,640-1,655	1,600-1,620
May 27	8.03-8.21	16,957.000	7.692	1,625-1,650	1,600-1,620
June 3	8.07-8.23	16,975.625	7.700	1,575-1,625	1,600-1,620
June 10	7.80-8.25	16,692.000	7.571	1,575-1,625	1,600-1,620
June 17	7.79-7.97	16,646.500	7.551	1,575-1,625	1,600-1,620
June 24	7.27-7.87	15,764.000	7.150	1,575-1,625	1,600-1,620
Average for month of:					
January	6.748	14,501.250	6.578	1,487	1,513
February	7.065	15,344.625	6.960	1,520	1,513
March	7.510	16,184.524	7.341	1,609	1,563
April	7.480	16,136.429	7.319	1,647	1,685
May	7.920	16,919.750	7.675	1,645	1,629
June	7.564	16,154.432	7.328	1,578	1,610

¹Mean of the cash buyer price and the cash seller and settlement price.

